



Donald L. Stephens, Jr.  
 Application No. 09/866,570 Filed. May 25, 2001  
 Our Ref. No. 4630-59094  
 Art Unit: 1652  
 For: TRANSACYLASES OF THE PACLITAXEL  
 BIOSYNTHETIC PATHWAY  
 Inventor(s): Croteau et al.

FROM PEPTIDE FRAGMENT SEQUENCE 2

NH2-	I	L	V	Y	Y	P	P	-COOH	(Residues 1-7 of SEQ ID NO: 30)
5'	ATI	CTI	GTI	TAT	TAT	CCI	CC	3'	AT-FOR1 (SEQ ID NO: 34)
	T		C	C	C	C			
			A			A			

NH2-	Y	Y	P	P	F	A	G	-COOH	(Residues 4-10 of SEQ ID NO: 30)
5'	TAT	TAT	CCI	CCI	TTT	GCI	GG	3'	AT-FOR2 (SEQ ID NO: 35)
	C	C	C	C	C	C			
			A	A		A			

FROM SEQUENCE HOMOLOGY CONSIDERATIONS

NH2-	F	Y	P	F	A	G	R	-COOH	(SEQ ID NO: 39)
5'	TTC	TAT	CCI	TTC	GCI	GGI	AG	3'	AT-FOR3 (SEQ ID NO: 36)
	T	C		T	C	C			
				A	A				

NH2-	Y	Y	P	L	A	G	R	-COOH	(SEQ ID NO: 40)
5'	TAC	TAT	CCI	TTI	GCI	GGI	AG	3'	AT-FOR4 (SEQ ID NO: 37)
	T	C		C	C	C	C		
				A	A				

NH2-	D	F	G	W	G	K	P	-COOH	(SEQ ID NO: 41)
3'	CTA	AAA	CCI	ACC	CCI	TTT	GG	5'	AT-REV1 (SEQ ID NO: 38)
	G	G	C		C	C			
			A		A				

FIG. 4

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FIG. 6A

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FIG. 6B

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cab40761 (SEQ ID NO: 61)  
M P M I M A T P D I T O K I N V V P R F O N 23

FIG. 6C

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 Inventor(s): Croteau et al.

TAX1 (SEQ ID NO: 28)	KTT <del>Q</del> Q <del>S</del> SI <del>D</del> NPGVRSI <del>N</del> ALLIYNASPSPTMISADP . . . . .	AKPI	66	
TAX2 (SEQ ID NO: 26)	KNI <del>H</del> SSP <del>D</del> NKT . . . RGLTN <del>T</del> LSVYNASQRVS . VSADP . . . . .	AKTI	60	
aab61522 (SEQ ID NO: 59)	• . . . . .	• . . . . .	0	
aab61523 (SEQ ID NO: 62)	KRI <del>N</del> SS <del>L</del> LD <del>L</del> SPM <del>Y</del> TGALLFYAADPQNLLG <del>S</del> TEET . . . . .	SLKA	65	
aab95283 (SEQ ID NO: 63)	DLK <del>L</del> SV <del>S</del> DLP <del>M</del> LSCHY <del>Q</del> GGC <del>L</del> TC <del>P</del> N . . . LPLPAL . . . . .	ISHL	62	
aab97723 (SEQ ID NO: 64)	HHS <del>Y</del> SS <del>N</del> LD <del>D</del> IGARVET <del>T</del> PSV <del>F</del> Y <del>P</del> STNNR <del>E</del> SV . . . . .	LKRL	76	
aac17079 (SEQ ID NO: 65)	W . L <del>P</del> <del>E</del> SS <del>N</del> LD <del>D</del> Q <del>I</del> Q <del>I</del> PFY <del>V</del> GG <del>L</del> IFHY . . . . .	YETL	184	
aac18062 (SEQ ID NO: 66)	LQK <del>N</del> SS <del>L</del> LD <del>D</del> Q <del>I</del> Q <del>I</del> PFY <del>V</del> GG <del>L</del> IFHY . . . . .	ETLSDNSDIT . . . . .	LSKL	58
aac27152 (SEQ ID NO: 67)	RKS <del>M</del> FL <del>S</del> SV <del>D</del> Q <del>I</del> N . . . FDVQ <del>T</del> VHFFRP <del>N</del> KE <del>P</del> PEM . . . . .	SEKL	72	
aac99311 (SEQ ID NO: 68)	LSRYN <del>N</del> SY <del>N</del> DQ <del>N</del> NIYQTCVSVGFFYENPDGIEISTIRE . . . . .	QL	66	
aac12025 (SEQ ID NO: 69)	GR <del>E</del> PLA <del>E</del> W <del>D</del> QV . . GTI <del>T</del> HI <del>P</del> TYFYD <del>K</del> P <del>S</del> ES <del>F</del> Q <del>G</del> N <del>V</del> . . . . .	VEIL	58	
caa20531 (SEQ ID NO: 70)	ET <del>T</del> S <del>S</del> ST <del>L</del> D <del>N</del> DP <del>N</del> E <del>V</del> Y <del>M</del> Y <del>A</del> T <del>I</del> Y <del>V</del> KANG <del>K</del> N <del>L</del> . . . DP . . . . .	VSLI	67	
caa44636 (SEQ ID NO: 71)	RET <del>K</del> EL <del>S</del> D <del>I</del> D <del>D</del> Q <del>E</del> GLR . . FQ <del>I</del> P <del>V</del> I <del>Q</del> Y <del>H</del> KD <del>S</del> SMGR <del>K</del> D <del>P</del> . . . . .	VKVI	68	
caa4432 (SEQ ID NO: 72)	YEFKQ <del>L</del> S <del>D</del> V <del>D</del> D <del>Q</del> Q <del>S</del> LR . . LQLPFVN <del>I</del> Y <del>P</del> HNP <del>S</del> LEGR <del>R</del> D <del>P</del> . . . . .	VKVI	61	
cab06427 (SEQ ID NO: 73)	KSLW <del>W</del> SS <del>N</del> TD <del>M</del> IL <del>R</del> TP <del>Y</del> SHTGA <del>V</del> LI <del>Y</del> KQ <del>P</del> D <del>N</del> N . EDN <del>I</del> H <del>P</del> SS <del>S</del> SMY <del>F</del> D <del>A</del> N <del>I</del>	67		
cab10318 (SEQ ID NO: 74)	LQ <del>T</del> Q <del>L</del> SI <del>Y</del> D <del>H</del> IL <del>P</del> P <del>V</del> Y <del>T</del> V <del>A</del> FL <del>F</del> Y <del>T</del> KNDL . . . ISQERT . . . . .	SHKA	64	
cab10319 (SEQ ID NO: 60)	R . LQ <del>S</del> SI <del>D</del> LYC <del>P</del> GI <del>Y</del> V <del>S</del> TIFFY . . . DLITESSEVF . . . . .	SEN <del>L</del>	58	
cab40761 (SEQ ID NO: 61)	HD <del>K</del> KK <del>L</del> IT <del>L</del> SN <del>L</del> DR <del>Q</del> CP <del>L</del> MY <del>S</del> V <del>F</del> EY <del>K</del> NT <del>T</del> IR <del>D</del> DS <del>V</del> . . . . .	FSNL	64	

FIG. 6D

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114  
 TAX1 (SEQ ID NO: 28) R E A L A K I L V Y Y P R E A G R L . R E T E N G D L E V E C T G E . G A M F L E A M A D N E A S V  
 TAX2 (SEQ ID NO: 26) R E A L S K Y A V Y Y P R E A G R L . R N T E N G D L E V E C T G E . G A V F V E A M A D N D E S V 108  
 aab61522 (SEQ ID NO: 59) . . . . .  
 aab61523 (SEQ ID NO: 62) K K S L S K T L P I F Y P L A G R L . G S . . . . . F V E C N D E G A V F I E A R V D H . L L S E 108  
 aab95283 (SEQ ID NO: 63) K H S L S I T T L H P P L A G R L S . T S S S G H V F L T C N D A G A D F V F A Q A K S I H V S D 111  
 aab97723 (SEQ ID NO: 64) Q D A L S E V A V P Y Y P L S G R L . R E V E N G K L E V F F G E E Q G V L M V S A N S S M D L A D 125  
 aac17079 (SEQ ID NO: 65) K T A L A E T A V S Y X A F A G E L V . T N P T G E P E I L C N N R G V D F V E A G A D . V E L R E 232  
 aac18062 (SEQ ID NO: 66) E S S I S E T T L Y X H V A G G R Y N . G T . . . D C V I E C N D Q G I G Y V E T A F D . V E L H Q 103  
 aac27152 (SEQ ID NO: 67) R K A L V K L M D A Y E F L A G R L R V D P S S G R I D V D C N G A . G A G F V T A A S D Y T A E E 121  
 aac99311 (SEQ ID NO: 68) Q N S L S K T L V S Y Y P E A G K V V . K N . . . D Y . I H C N D D G I E F V E V R I . R C R M N D 110  
 aad12025 (SEQ ID NO: 69) K T S L S R V A V H F Y P M A G R L R W L P . R G R F E L N C N A E . G V E F I E A E S E G K L E S D 106  
 caa20531 (SEQ ID NO: 70) R K A L S E L L V H Y Y P L S G K L M R S E S N G K L Q L V R L G E . G V P F E V A T S T L D E S S 116  
 caa64636 (SEQ ID NO: 71) K K A I A E T A V F Y Y P E A G R L . R E G N G R K L M V D C T G E . G I M F V E A D A D V T L E Q 116  
 caa94432 (SEQ ID NO: 72) K E A I G K A L V F Y Y P L A G R L . R E G P G R K L F V E C T G E . G I L F I E A D A D V S L E E 109  
 cab06427 (SEQ ID NO: 73) I E A L S K A L V P Y Y P M A G R L K . I N . G D R Y E I D C N A E . G A L F V E A E S S H V L E D 114  
 cab10318 (SEQ ID NO: 74) K T S L S E T T L K F Y P L A G R I T . G V . . . . T V D C T D E G A I F V D A R V N N C P L T E 108  
 cab10319 (SEQ ID NO: 60) K L S L S E T T S R Y Y P L A G R I E . G L . . . . S I S C N D E G A V F E A R T D L . L E P D 101  
 cab40761 (SEQ ID NO: 61) K L G L E E T M S V W Y P A A G R E G L D G G C K L N I R C N D G A V M V E A V A T G V K A S E 114

FIG. 6E

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TAX1 (SEQ ID NO: 28) LGD . FDDSNPSFQ . QLIFSLPLDTNF . . . . . KDLSLVVQYXTRATEG . GE 156  
TAX2 (SEQ ID NO: 26) JQD . FNEYDPSFQ . QLVFNLRDVN . . . . . EDLHALTVQYXTRATEG . GE 150  
aab61522 (SEQ ID NO: 59) ILEN . PNPN . ELNKLHPPFEVSDVP . . . . . ATVQYXTRATEG . GL 41  
aab61523 (SEQ ID NO: 62) FLKC . PVPE . SLELLIP . . . . . VAEKSRE . . . . . AVTWEVLLQANFEESGG . GL 149  
aab95283 (SEQ ID NO: 63) VIAGIDVPD . VVKEEFFTYDR . . . . . AVSYE . . . . . GHNRPIAVQYZELN . . . . . DGY 153  
aab97723 (SEQ ID NO: 64) LGDITTV2NPAWLPLIERNPGEAYKI . . . . . LEMPAKIAQYXTRATEG . GE 168  
aac17079 (SEQ ID NO: 65) JNLY . DPDE . SIAKLVPIKKH . . . . . VIALQYQZQQLKCG . SI 266  
aac18062 (SEQ ID NO: 66) FLIG . EESN . NLDDLVLG . . . . . SGFELSE . . . . . TETPZRAAIQLNMEKCG . GL 144  
aac27152 (SEQ ID NO: 67) LGD . LVYPNPAFAQLVTSQQL . . . . . SLPKD . . . . . DQPLFVFOITSEKCG . GE 163  
aac99311 (SEQ ID NO: 68) ILKY . ELRS . YARDLVLPKRVTVGSED . . . . . TTA . . . . . IVQLSHEDCG . GL 150  
aad12025 (SEQ ID NO: 69) FRD . FS . PTPEFENLM . PQVNYYKNPIE . . . . . TIPFLFLAQYXKEKCG . SI 147  
caa20531 (SEQ ID NO: 70) LN . . . . . YIENLDDQVALRLVPEIEIDYESNCVYHPALQYXKEAGE . GE 160  
caa64636 (SEQ ID NO: 71) FGDELQPPFPCL . ELLYDVPDSAGV . . . . . LNCPZLQYXTRATEG . GE 159  
caa94432 (SEQ ID NO: 72) FWDTLPYSSMNONIHNALNSDEV . . . . . LNSPALLQYXTRATEG . GE 153  
cab06427 (SEQ ID NO: 73) FGD . FR . PNDELHRVMVPTCDYSKGIS . . . . . SFRZLMVQYXTRATEG . GV 156  
cab10318 (SEQ ID NO: 74) FLKC . PDFD . ALQQLLPLOVVDNPYVA . . . . . ATWZELVKAZYEGEG . GM 152  
cab10319 (SEQ ID NO: 60) FLRN . LNTD . SLSGFPLPTLAAGE . . . . . S . . . . . PAAWELIASVKVYEEEGGSSGV 143  
cab40761 (SEQ ID NO: 61) LGDLTQYNEFYENLVYKPSLDGSV . . . . . MELVVAQYXTRATEG . GY 156

FIG. 6F

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Inventor(s): Croteau et al.

TAX1 (SEQ ID NO: 28) VVGVSFHGVCDGRGAAQELKGLEMAR. GEVKLS. . . . . LEPINW 195  
TAX2 (SEQ ID NO: 26) VVGTRFHSSVSDGKGTGQQLKGGMEMAR. GEFKPS. . . . . LEPINW 189  
aab61522 (SEQ ID NO: 59) ALIGLSEKLCDALSGLIEVNSKWAFAAGQDDE. . . . . LITESF 80  
aab61523 (SEQ ID NO: 62) VITICVSSEKIDATSLAMEIRGWAESSRG. . L. . . . . GITLIESE 187  
aab95283 (SEQ ID NO: 63) FIGCSVNNGAVTDTSLWNFINTFAEVSSGAKNVT. . . . . ROPDFTRESVL 198  
aab97723 (SEQ ID NO: 64) SLGIRLCHCICDGFAMQELIGSWAATAKTGKLIAD. . . . . PEPVW 209  
aac17079 (SEQ ID NO: 65) VVGCTFDHRVADAYSMMNMEILLSSWAISSDVPPI. . . . . SCV. . ESF 305  
aac18062 (SEQ ID NO: 66) VIGAQENHIIIGDMETMSTEMNNSWAKACRVGKIE. . . . . VAHETF 183  
aac227152 (SEQ ID NO: 67) AMGISTNNTTTFDGLSFKTELENLASSILH. . EKPLS. . . . . TPECN 201  
aac99311 (SEQ ID NO: 68) AVAFGISHKVADEGCTIASEMKDWAASACYLSS. . . . . HHVPTZLL 191  
aad12025 (SEQ ID NO: 69) SLSVNNSVSAIVDQOSALHLISEYGRILAR. . GEPLE. . . . . TVEFL 185  
caa20531 (SEQ ID NO: 70) TIGTALITHAVCDGYYGVQAQIIHLTEIL. . AGKTEPS. . . . . VKSVN 199  
caa64636 (SEQ ID NO: 71) IFALRLNNTMSDAPGLVQEMTAVGEMAR. . GGAPS. . . . . ILPFW 198  
caa94432 (SEQ ID NO: 72) IEGLCFNNTMADGFGIVQEMKATAEILAR. . GAFAPS. . . . . ILZVW 192  
cab06427 (SEQ ID NO: 73) SIGFAQHCHVCDGMAHEEZNNSKWAIAK. . GLLPA. . . . . LEZVH 194  
cab10318 (SEQ ID NO: 74) ALGICITHKIAADAASISTEIRSWAATAGENDA. . . . . AAMESEVF 193  
cab10319 (SEQ ID NO: 60) AVSVSVSEKICDIASLVTEVKDWATTTAKGKSN. . . . . STIE. . F 181  
cab40761 (SEQ ID NO: 61) SIGGTSSESLFDGIGSAYEEIIHAWASNSHIHNSKSKITNKKEDVVVIKEVH 20f

FIG. 6G

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TAX1 (SEQ ID NO: 28) NRELVKLD...DP...KYLQFFHEE...EFLRAP...SIV...EKIVQ 227  
TAX2 (SEQ ID NO: 26) NREMVKPE...DI...MYLQFDEE...DFIHPP...LNL...ERSIQ 221  
aab61522 (SEQ ID NO: 59) DLAKMFPPCDIEN...LNMATCITKE...NIVT... 107  
aab61523 (SEQ ID NO: 62) TASEVEPKPLDEL...PSKPMDRKEVEEEMS...CVT... 218  
aab95283 (SEQ ID NO: 63) ISPAVLKVPQGSPKVTFDENAPLRLERIESFSRESIQELKAVVNKK... 243  
aab97723 (SEQ ID NO: 64) DRETEK2R...NP...PMVKKYHEE...EYLPPIEERSNLTNSLWD...TKPLQ 249  
aac17079 (SEQ ID NO: 65) RSRLLNPRRPLVMDPSIDQIYMPVTSLLPPQETTNPENLLAS... 347  
aac18062 (SEQ ID NO: 66) GLAPLMPSAAKVLN...VKEFVS...IPPPPSFEG... 210  
aac27152 (SEQ ID NO: 67) DRTLKARDPSS...VAFHEE...EL...VKEFQDCETTTVFEATSEHLDF 242  
aac99311 (SEQ ID NO: 68) VSDSIEPPRDNTI...CEQFPPTSK...NCVE... 216  
aad12025 (SEQ ID NO: 69) DRKILWAGEPLPPFVSSPPKEDK...EEFDQPPFLIGETDNVEERKKKTIV... 232  
caa20531 (SEQ ID NO: 70) QRERLUVGKIDNKP...GKVPGSHI...D...GFLATSAYLPT...TDVVT 237  
caa64636 (SEQ ID NO: 71) CRELLNAR...NP...PQVTCH...EYDEVRDTGTIIP...DDMVH 236  
caa94432 (SEQ ID NO: 72) QRALLTAR...DP...PRITREY...EYDQVVDMKSGLIPV... 230  
cab06427 (SEQ ID NO: 73) DRYLHLRPRNPPQI...KYSHS...QFE...PFVPSLPNELLDGTNKSQ... 235  
cab10318 (SEQ ID NO: 74) AGANFYPPANEAF...KLPADEQAGKRS.SIT... 221  
cab10319 (SEQ ID NO: 60) AETTIYPPPPSHM...YEQFPSTDSDSNITSKYVL... 213  
cab40761 (SEQ ID NO: 61) DRRNLVNRDAVRETNAAAICHLYQLIRQAMMTYQEQQNRNLELPDSSGFVI 256

FIG. 6H

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TAX1 (SEQ ID NO: 28)	T Y E I D F E T I N Y I K Q S V . M E E C . . . . .	K E F 251
TAX2 (SEQ ID NO: 26)	A S M V I S F E R I N Y I K R C M . M E E C . . . . .	K E F 245
aab61522 (SEQ ID NO: 59)	R R E V F L R S S V E S L R E R E S G N K . . . . .	K I R . A T 133
aab61523 (SEQ ID NO: 62)	K R E V F D A S K I K K R A K . A S R N . . . . .	L V K N P T 244
aab95283 (SEQ ID NO: 63)	K W L T V D N G E I D G V E L L G Q S N D K L N G K E N G G I L T E M L E S L E G R N D A V S K P V 293	
aab97723 (SEQ ID NO: 64)	K C Y R I S K E F Q C R V K S I A . Q G E D . . . . .	P T L 273
aac17079 (SEQ ID NO: 65)	R I Y Y I K A N A L Q E I L Q T L A S S S K N . . . . .	G K R T 373
aac18062 (SEQ ID NO: 66)	K R E V F N E N A I T R K E A T E E D G D G D D . . . . .	D Q K K K R P S 244
aac27152 (SEQ ID NO: 67)	K I E K L S S E Q I K K E R A . . S E T . . . . .	S N G 265
aac99311 (SEQ ID NO: 68)	K T E I F P P E A T E K L K S K A V E F G . . . . .	I E K P T 242
aad12025 (SEQ ID NO: 69)	V M L P L S T S Q L Q K R S K A N G S K H . . . . .	S D P 257
caa20531 (SEQ ID NO: 70)	E T I N I R A G D I K R L K D S M . M K E C . . . . .	E Y L 261
caa64636 (SEQ ID NO: 71)	K S E F F G P S E V S A L R R E V . P H H L . . . . .	R K . 259
caa94432 (SEQ ID NO: 72)	Q L A F F S Q L Q I S T L R Q T L . P A H L . . . . .	H D . 253
cab06427 (SEQ ID NO: 73)	T L E I L S R E Q I N T E K Q K L D L S N N . . . . .	T T R 260
cab10318 (SEQ ID NO: 74)	K R E V F E A S K V E D E R T K A A S E E . . . . .	T V D Q P T 248
cab10319 (SEQ ID NO: 60)	K R E V F F E P S K I A E L K H K A A S E S . . . . .	V P V P T 239
cab10761 (SEQ ID NO: 61)	K T E I N C D A T E S M K K K S I E G . . . . .	

FIG. 6I

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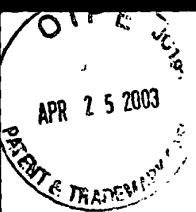
TAX1 (SEQ ID NO: 28) . CS . . SEEVASSAMTWIARTRAFQIPESEY . . . . . VKILFGMDM&NSEN 291  
TAX2 (SEQ ID NO: 26) . FS . . AFEVVVVALIWLARTKSFRIPPNAY . . . . . VKIIEPIDI&MSN&SF 285  
aab61522 (SEQ ID NO: 59) RVE . . . . VLSVFEIWSRE . MASTNHD&DKTGGKIYT . . . . LIHPYVNLSRQAD 173  
aab61523 (SEQ ID NO: 62) RVE . . . . AVIALEF&ECCV . TKVSRLSSSLTPRTSV . . . . LQILYNL&GKVD 284  
aab95283 (SEQ ID NO: 63) AVEIISSEFQSLC ALLW&RAIRKLPSSKTT . . . . FRMAYNCE&H&ALS 336  
aab97723 (SEQ ID NO: 64) VCS . . . . TEDAMAAH&H&VSSWVKALDVKPLDYN . . . . LRLTFSYN&V&T&R 315  
aac17079 (SEQ ID NO: 65) KLE . . . . SFSAF&FLYKLVAEHAAKDPVPIKTSK . . . . LGIVVYD&G&R&LM 413  
aac18062 (SEQ ID NO: 66) RVD . . . . LVT&AFLSKSLIEMDCAKEQTKSRPSL . . . . MVHMMN&LR&K&TK 286  
aac27152 (SEQ ID NO: 67) NVRVVTG&ENVTALV&W&RCKALSVAEEGEET . NLERESTIYAYD&I&G&L . 313  
aac99311 (SEQ ID NO: 68) RVE . . . . VLT&AFLS&RCA&TVA&GKSAAKNNNCGOSL&PFPVQ&N&L&R&P&L 287  
aad12025 (SEQ ID NO: 69) AKGFTTRYETVTGH&W&RCA&CKARGHSPEQPT . AL . . . . GICID&T&S&M . 299  
caa20531 (SEQ ID NO: 70) KESEFTTYEVLSSYI&W&KLR&SRALKLNPD&G&IT . . . . V . LGVAYG&I&R&H&V&L 304  
caa64636 (SEQ ID NO: 71) . CS . . TFEULLT&V&L&E&C&RT&MSL&KPD&P&EE . . . . VRALCIYNA&S&F 299  
caa94432 (SEQ ID NO: 72) . CP . . SFEVLT&A&Y&V&R&L&T&I&L&Q&F&K&P&EE . . . . VREL&C&V&M&N&L&R&S&K&ID 293  
cab06427 (SEQ ID NO: 73) . . . LSTYEVVVA&H&W&RSVSK&A&GLS&D&H&E&I . . . . IMPYD&G&S&E&IN 300  
cab10318 (SEQ ID NO: 74) RVE . . . . SVTIALI&W&R&C&F . . . . VASSK . . . . TT&C&D&H&K&V . . . . LVQ&L&N&R&S&K&IP 286  
cab10319 (SEQ ID NO: 60) RVE . . . . AIMSLI&W&R&CA . . . . RNSSRSNLL&I&P&R&Q&AV . . . . MWQ&AM&D&I&R&L&R&P 279  
cab40761 (SEQ ID NO: 61) . EMCSS&F&LA&H&W&K&A&R&T&R&L&G&R&R&D . . . . MVCLQ&F&A&V&D&I&R&K&T&E 318

FIG. 6J

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Donald L. Stephens, Jr.  
Application No. 09/866,570 Filed: May 25, 2001  
Our Ref. No. 4630-59094  
Art Unit: 1652  
For TRANSCYCLASES OF THE PACLITAXEL  
BIOSYNTHETIC PATHWAY  
Inventor(s): Croteau et al.

TAX1 (SEQ ID NO: 28)	P · P P P S G Y X G N S I G T A C A V D N V Q D · · L L S G · S L L R A I M I I K K S X V S L · · 334
TAX2 (SEQ ID NO: 26)	S · P P E K G Y X G N A I G N A C A M D N V K D · · L L I N G · S L L Y A L M L I K K S X F A L · · 328
aab61522 (SEQ ID NO: 59)	P · D I P D N M G G N I M R E S V T V P M M I I N · · E N D E E K A S L V D Q M R E E I R K I · · 217
aab61523 (SEQ ID NO: 62)	S · · L C E N T I G N · M I L S L M I · · L K N E E · · A A I E R I Q D V D E I R R A X E I F · · 324
aab95283 (SEQ ID NO: 63)	P · K K N P E Y X G N A I · · · · · · Q S V P T E A T A A E V L S R D L K W C · · 368
aab97723 (SEQ ID NO: 64)	T L K R K G F Y G N V V C L A C A M S S V E S · · L I N D · S L S K T T R L V Q D A R L R V · · 359
aac17079 (SEQ ID NO: 65)	E · K E N N T Y F G N V I S V P F G G Q R I D D L I S K P L S W V T E E V H R F L A K · · 455
aac18062 (SEQ ID NO: 66)	L · A L E N D V S G N E F · · · · I V V N A · · E S K I T V A P K I T D L T E S L G S A · · 323
aac27152 (SEQ ID NO: 67)	N P E E L P S Y T G N A V L T A Y A K E K C K A · · L L E E · P F G R I V E M V G E G S K R I · · 357
aac99311 (SEQ ID NO: 68)	· · A B Q N S V G N V L V S I Y F S R T I K E N D Y N E K E Y T K L V I N E L R K E X Q K I · · 331
aad12025 (SEQ ID NO: 69)	E P P P E L P R G Y X G N A T L D V V A A S T S G E · · L I S N · E L G F A A S L I S K A I K N V · · 343
caa20531 (SEQ ID NO: 70)	P · P A P K G Y X G N A Y I D V Y V E L T V R E · · L E E S · S I S N I A N R V K K A X K T A Y E K · · 350
caa64636 (SEQ ID NO: 71)	P · P A P T G Y X G N A F F P V A V T A A K · · L S K N · P L G Y A L E L Y K K T K S D V · · 342
caa94432 (SEQ ID NO: 72)	I · P L · G Y X G N A V V V P A V I T T A A K · · L C G N · P L G Y A V D L I R K A X A K A · · 334
cab06427 (SEQ ID NO: 73)	N P S A E K G Y X G N A V V V P L A V C T A T V G D · · L S C N · P L I D T A G K V Q E A L K G L · · 344
cab10318 (SEQ ID NO: 74)	S · L I Q E S S I G N A L M E S S V V · · L S I G R · · G G E V K I E E A V R D L R K K E E L · · 328
cab10319 (SEQ ID NO: 60)	S · S V A P K D V I G N I L Q S G F S · · L K K D A · · E S E F E I P E I V A T F R K N K E R V · · 321
cab40761 (SEQ ID NO: 61)	T · P L P E G E S G N A V V V L A S V A S T A R E · · L L E E L T L E S I V N K I R E A K K S I · · 362

FIG. 6K

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Donald L. Stephens, Jr.  
Application No. 09/866,570 Filed: May 25, 2001  
Our Ref. No. 4630-59094  
Art Unit: 1652  
For: TRANSCYLASES OF THE PACLITAXEL  
BIOSYNTHETIC PATHWAY  
Inventor(s): Croteau et al.

FIG. 6L

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Donald L. Stephens, Jr.  
Application No. 09/866,570 Filed: May 25, 2001  
Our Ref. No. 4630-59094  
Art Unit: 1652  
For: TRANSACYLASES OF THE PACLITAXEL  
BIOSYNTHETIC PATHWAY  
Inventor(s): Croteau et al.

TAX1 (SEQ ID NO: 28) G . F D E V D E G G N A Y S V S P V Q Q S . . A L A M Q N Y F L E L K P S K N K P D G I K I L M 414  
TAX2 (SEQ ID NO: 26) G . F Y E A D E G G N A Y N V S P M Q Q Q R E H E L A M Q N Y F L R S A K N M I D G I K I L M 410  
aab61522 (SEQ ID NO: 59) P V Y . E A D E G G K E L W V A S . . . . . A R M S . Y K N L . . V A F I D T K E G D G I E A W I 300  
aab61523 (SEQ ID NO: 62) G L Y . D A D E G G K E P Y W V T G . . . . . R G T S H E K N L . . M L L I D T K D G E G I E A W I 408  
aab95283 (SEQ ID NO: 63) P M Y . D N D E G G R P Y A V R S . . . . . G R S N K F D G K I S A . F P G R E G N G T V D L E V 459  
aab97723 (SEQ ID NO: 64) E M Y E T A D E G G K E P Y A G P I . . . . D L R P T P Q V C V I L L P Q G G V E S G N D Q S M V V C L 441  
aac17079 (SEQ ID NO: 65) P V N . Q V D E G G S P Y F G S Y . . . . . H F P W G G S A G Y V M P M P S S V D D R D W M V Y L 544  
aac18062 (SEQ ID NO: 66) P L Y . E V D E G G I P E S L V D T . . . . . T A V P F . . . . G L I V L M D E A P A G D G I A V R A 412  
aac27152 (SEQ ID NO: 67) G . F A E V E Y P P G K E P K Y S C P V V Y H R K D I . . . . . V L L E P D I D G D S K G V Y V L A 431  
aac99311 (SEQ ID NO: 68) P F Y . D V D E G G K E P I W V . C . . . . L F Q P P Y I K N C V V M M D O Y P F G D D Y G I E A I V 417  
aad12025 (SEQ ID NO: 69) P . M Y G L D D E G G K E F Y T C P G T H D F D G D . . . . . S L I L P D Q N E D G . S V I L A T 433  
caa20531 (SEQ ID NO: 70) G W F G S M D E G Y N E P Y N L R P L . T Q R E S T V H V G M I L K P S K S D P S M E G G V K V I M 435  
caa64636 (SEQ ID NO: 71) G . F F G E V D E G G K A Y Y G G P A K G G V G A I P G V A S F Y I P F K . N K K G E N G I V V P I 424  
caa94432 (SEQ ID NO: 72) G . V E N V D E G G K A I F G G P T T G A R I T R G L V S F C V P E M . N R N G E K G T A L S L 416  
cab06427 (SEQ ID NO: 73) P . Y Q A M D E G G S P T E F G I S N I F Y D G Q . . . . C F L I P S R D G D G . S M T L A I 428  
cab10318 (SEQ ID NO: 74) P L Y . E A S T G W D S P Y W V V G . . . . N V S P V L G N L . . A M L I D S K D G Q G I E A F V 418  
cab10319 (SEQ ID NO: 60) P F Y . E V D E G S S P Y W V G Y . . . . A S H T I Y D N M V G V V L I D S K E G D G V E A W I 407  
cab40761 (SEQ ID NO: 61) P . F H N V G E G N G . . . . G E P A D Y M A P L C P P V P Q V A Y F M K N P K D A K G V L V R I 441

FIG. 6M

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For: TRANSACYLASES OF THE PACLITAXEL  
BIOSYNTHETIC PATHWAY  
Inventor(s): Croteau et al.

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TAX1 (SEQ ID NO: 28) F ~~L~~ PLSK ~~M~~ KSEKKIEAMMMK. KYVAKV . . . . .  
TAX2 (SEQ ID NO: 26) F ~~M~~ PASMVKP ~~K~~ IEMEVtin. KYVAKICNSKL . . . . .  
aab61522 (SEQ ID NO: 59) N ~~D~~ QNDMSR ~~E~~ EADEEELLRYVSSNPSVMVSVS . . . . .  
aab61523 (SEQ ID NO: 62) T ~~A~~ TEEQMSL ~~S~~ LEEDQELLESASLNP ~~P~~ VLI . . . . .  
aab95283 (SEQ ID NO: 63) V ~~L~~ SPETMAGIESDGEFMYV ~~T~~ NK . . . . .  
aab97723 (SEQ ID NO: 64) C ~~L~~ PPTAVHTE ~~T~~ RLLS ~~L~~ NDHK . . . . .  
aac17079 (SEQ ID NO: 65) H ~~A~~ TKGQ ~~L~~ RIEEEASHV ~~V~~ LKPI ~~D~~ NDYLKI . . . . .  
aac18062 (SEQ ID NO: 66) C ~~L~~ SEHD ~~M~~ TIQEZQOHHQI ~~L~~ SYVS . . . . .  
aac27152 (SEQ ID NO: 67) A ~~L~~ PSKEM ~~S~~ KEQOHWFEDTLC . . . . .  
aac99311 (SEQ ID NO: 68) S ~~F~~ EQEKMSA ~~E~~ KNEQOLQFVSN . . . . .  
aad12025 (SEQ ID NO: 69) C ~~L~~ QVAH ~~M~~ EA ~~K~~ KHEYEDI . . . . .  
caa20531 (SEQ ID NO: 70) K ~~L~~ P ~~R~~ DAM ~~V~~ E ~~K~~ REMATMKKLYFGDTN . . . . .  
caa64636 (SEQ ID NO: 71) C ~~L~~ P ~~G~~ FAMETEVKELDGMLKV ~~D~~ APL . . . VNSNYAIIRPAL .  
caa94432 (SEQ ID NO: 72) C ~~L~~ P ~~P~~ PAMERTRANVHASLQV ~~K~~ QVVD ~~S~~ HMQTIQSASK . . . . .  
cab06427 (SEQ ID NO: 73) N ~~L~~ ESSHLSREK ~~K~~ YFDE . . . . .  
cab10318 (SEQ ID NO: 74) T ~~L~~ P ~~E~~ EN ~~M~~ SSEEQNP ~~E~~ LAFATMNP ~~S~~ VLV . . . . .  
cab10319 (SEQ ID NO: 60) S ~~L~~ P ~~E~~ D ~~M~~ SVEVDDQELLAYAVLNPPVVA . . . . .  
cab40761 (SEQ ID NO: 61) G ~~L~~ D ~~P~~ RDVNGE ~~S~~ NHFLDC . . . . .

FIG. 6N

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